

What is claimed is:

1. A method of fabricating a capacitor for a semiconductor device, comprising the step of:

5 a) forming a sacrificial layer in the height of capacitor on the substrate so that a etch rate becomes lower if it's height becomes higher;

b) forming a trench by selectively eliminating the sacrifice layer in manner of wet etch process;

10 c) forming a bottom electrode in the trench;

d) eliminating the sacrificial layer;

e) forming a dielectric thin film on the bottom electrode; and

f) forming the top electrode on the dielectric thin film.

15

2. The method of fabricating the capacitor as recited in claim 1, wherein the sacrificial layer is a TEOS layer.

3. The method of fabricating the capacitor as recited in  
20 claim 2, wherein the sacrifice layer is formed in response to a RF power, an O<sub>2</sub> flow, and a spacing between the substrate and the shower head, and a upper portion of the sacrifice layer has a higher wet etching rate than a lower portion of the sacrifice layer does.

25

4. The method of fabricating the capacitor as recited in claim 3, wherein the sacrifice layer is deposited in thickness

ranging from about 10000 Å to about 25000 Å.